Radiology Report
08/02/2007

Testicular Ultrasound

Clinical Indication: Right hemiscrotal enlargement

Real time sonography of the scrotum is performed.

The right testicle is markedly enlarged measuring 9.6 x 5.7 cm in its maximum CC and AP dimensions. This is asymmetric. The right testicle is grossly and diffusely abnormal with no normal parenchyma identified. Multiple hypo and inhomogeneous abnormalities are completely replacing the normal right testicle. A focal area of shadowing is also noted. Normal flow is demonstrated to the right testicle by duplex evaluation.

The left testicle is normal in size measuring 5.5 x 2.7 cm in its maximum CC and AP dimensions. The parenchymal pattern of the left testicle is normal. Normal flow is demonstrated to the left testicle by duplex evaluation.

The left epididymis has a normal sonographic appearance. The right epididymis is not visualized. No hydroceles are identified.

Abnormal complex echogenicity completely replacing the right testicle and enlarging it.

Sonographic appearance is most suggestive of a primary testicular neoplasm. Differential considerations would include lymphoma, leukemia or metastatic disease. Clinical correlation is recommended. CT of the abdomen and pelvis (and chest) is also recommended. Preliminary report was called to ordering physician.

History & Physical
08/07/2007

Chief Complaint: Right testicle mass

History of Present Illness: Patient is a 45-year-old white male who noted an enlarged right testicle mass over the last four months. It has quadrupled in size. Ultrasound confirmed that the right testicle is completely filled with lesion. Tumor markers were negative. He now presents for right radical orchiectomy.

Allergies: No known allergies

Medications: Routine medications are none

Past Medical History: None

Past Surgical History: None

Social History: Married for 25 years. He has one child. Tobacco use daily. Alcohol use twice a month.

Family History: Significant for lung disease and thyroid disease

Review of Systems: He reports decreased sex drive, erectile dysfunction. He has some wheezing at times.

Physical Examination:
General: The patient is a well-developed, well-nourished white male in no apparent distress. He is alert and oriented to person, place and time with a normal affect.
HEENT: Normocephalic and atraumatic. Extraocular muscles are intact. The neck is supple.
Chest: Normal respiratory effort
Cardiovascular: Regular rhythm and normal rate
Abdomen: The abdomen is soft and non-tender
Genitourinary: Locally enlarged right testicle of a firm mass

Assessment: Right testicle mass

Plan: Proceed with right radical orchiectomy

Signed: Urologist

Operative Report
08/07/2007

Preoperative Diagnosis: Right renal mass

Postoperative Diagnosis: Right renal mass with right inguinal hernia

Procedure: Right radical orchiectomy

Anesthesia: General

Consultation: Intraoperative consultation by General Surgeon

History of Present Illness: The patient is a 45-year-old white male with an enlarging right testicle mass, which has quadrupled in size in a short period of time. Tumor markers were negative. He presents for right radical orchiectomy. After the risks and benefits of the procedure were explained, an informed consent was obtained.

Procedure: The patient was taken to the operating room and comfortably placed in the supine position. He was sterilely prepped and draped in standard fashion, exposing the genitalia and right lower quadrant. A three inch incision was made parallel to the intertriginous lines about the level of the internal ring. Electrocautery was used to maintain hemostasis. There was a crossing vein. The superficial epigastric was identified, doubly ligated with 3-0 silk suture and divided. Dissection was carried down to the aponeurosis of the external oblique. The external inguinal ring was identified. The fascia was opened sharply parallel to the aponeurosis of the external oblique. Cord was then mobilized. It was markedly thickened. Concern about possible hernia present. Was able to get around the entire cord but did not put a Potts around it. Did mobilize the enlarged testicle carefully up into the wound. The cord was mobilized to the internal inguinal ring again due to the size of the defect. The cord was dissected down and I was able to identify the vas deferens and associated vessels, as well as blood vessels to the cord. There was a lot of adipose tissue involved.

General Surgeon was consulted to assist in the dissection and management of the right inguinal hernia. The internal spermatic vessels were doubly ligated with 0 silk suture with a suture ligature distally and a silk free tie proximally performed with the vas deferens and associated vessels. The wound was irrigated with sterile water. Gen Surgeon repaired the hernia; please see his dictation for details and for closure as well.

The patient tolerated the procedure extremely well. He was extubated in the operating room and transferred to a gurney with assistance. He went to the recovery room in stable condition.

Signed: Urologist

Operative Report
08/07/2007

Preoperative Diagnosis: Right testicular mass

Postoperative Diagnoses: Right testicular mass and right inguinal hernia, direct

Procedure: Right inguinal hernia repair with mesh

Anesthesia: LMA with local

Complications: None

Indications: A 45-year-old gentleman undergoing a radical right orchiectomy was found to have a right direct inguinal hernia. Plan for right inguinal exploration and repair of defect. The risks, benefits and alternatives were not able to be discussed with the patient due to the urgent nature of the intraoperative consult. I quickly reviewed the chart, and this will be dictated under a separate intraoperative consultation note.

Procedure: Upon my arrival, the orchiectomy was underway. The vas and cord structures were encircled with the Penrose. Large amounts of fatty tissue were evident extruding through the defect in the floor. Due to this, there was a concern that there may be omentum extruding from the abdominal cavity. I inspected this area and identified a direct hernia but no obvious small bowel, colon or omentum. At this point, Dr. Urology completed the orchiectomy and then I began the inguinal hernia repair.

The patient was already in the supine position and the inguinal region was exposed. External oblique fibers were already divided. I inspected the floor proximally at 2.5 cm. A 3 cm defect was noted. I used a large plug and secured this, 2-0 Prolene at the shelving edge of the inguinal ligament, pubic tubercle and transversalis fascia. Care was taken to avoid nerve injury during suture placement; 2-0 Prolene was used to place sutures. At the completion of this, Marcaine was injected. Copious irrigation was performed. I then closed the external oblique fibers using 2-0 Vicryl in a running fashion; 3-0 Vicryl was used to close the subcutaneous space and Scarpa's layer in a running fashion x 2, and 4-0 was used to close the skin edges. Dermabond was applied. All counts were correct. The patient tolerated the procedure well and was transferred back to the recovery room in stable condition.

Signed: General Surgeon

Pathology Report
08/07/2007

Clinical Information: Right scrotal mass

Specimen:
Right testicle

Gross Description:
The specimen consists of a 422 gram orchiectomy specimen. The testicle measures 8.9 cm in diameter and the attached spermatic cord measures 17.5 cm in length x 3.3 cm in diameter. The testicle is replaced by multinodular soft, cut tissue. Distinct involvement of the tunica albuginea is not identified. Sections are taken as follows: Cassette 1A contains the spermatic cord margin, and representative sections of the testicle are submitted in Cassettes 1B through 1F for microscopic examination.

Final Diagnosis:
Right Testicle: Seminoma. See CAP checklist.

Laterality: Right
Focality: Unifocal
Tumor Size: 3 cm in greatest dimension
Histologic Type: Seminoma, classic type
Pathologic Staging: Primary tumor: pT2, tumor extends to tunica albuginea with involvement of tunica vaginalis
Regional lymph nodes: pNX
Distant metastasis: pMX
Margins: Spermatic cord margin uninvolved by tumor
Venous Invasion: Absent

Radiology Report
08/07/2007

CT Chest, Abdomen and Pelvis w/Contrast

Clinical Indication: Right testicular mass with orchiectomy

Multiple contiguous axial imaging was acquired through the chest, abdomen, and pelvis after the administration of oral contrast and 98 ccs of Omnipaque 350 contrast material intravenously without incident.

Chest: There are within normal limits of size axillary lymph nodes. There is a prominent AP window lymph node. There is no significant hilar adenopathy. There is a mildly prominent lymph node in the AP window. No significant pericardial or pleural effusion is noted. There is no significant retrocrural adenopathy. No pulmonary nodules are identified. There is patchy atelectasis in the bases. Atelectasis is also present in the right middle lobe. There is a tiny prepericardial lymph node.

There is fatty infiltration of the liver. No focal liver lesions are noted. Adrenal glands are unremarkable. Pancreas appears within normal limits as is the spleen. There are enlarged portacaval lymph nodes. There is a retro-aortic left renal vein. Retroperitoneal adenopathy is also present. These could be reactive or metastatic in nature. There is gas and inflammation in the subcutaneous soft tissues over the right groin and lower abdominal wall with inflammatory change along the right inguinal canal consistent with orchiectomy. The prostate and seminal vesicles are unremarkable.

Mildly prominent lymph node in the mediastinum of uncertain clinical significance

Scattered areas of atelectasis in the chest

Fatty liver

Enlarged retroperitoneal and portacaval lymph nodes. These may be either reactive or metastatic in nature.

Postsurgical gas and inflammatory change in the right abdominal wall and groin

Radiology Report
08/22/2007

PET Tumor Imaging Skull-Thigh

Indication: Newly diagnosed testicular cancer

PET tumor imaging is performed skull to thigh. 17 mCi F18 FDG was injected at the right antecubital fossa. Glucose level is 149. Correlation is made with CT from 8-7-07 where the patient had indeterminate retroperitoneal and mediastinal lymph nodes.

No definitively abnormal activity is identified in these locations on PET. There is a normal distribution of activity at this time. Given the small size of the nodes on CT, sensitivity of detection may be decreased on PET and short term follow-up with CT is suggested.

Normal PET scan distribution, no abnormal activity identified in the region of the indeterminate lymph nodes on recent CT scan. Short term follow-up with CT suggested for re-evaluation of stability.

Outpatient Clinic Note
08/23/2007 – Radiation Oncology

Requesting Physician: Dr Medical Oncology

Reason for Consultation: Patient is a 45-year-old gentleman seen in consultation regarding potential radiation therapy for his classical seminoma involving the right testis, status post radical orchiectomy.

History of Present Illness: The patient's history dates back several weeks ago when he began to notice an enlarging right testicle. The patient sought evaluation with his primary physician. This led to subsequent ultrasound of the testis on 08/02/2007, and this revealed an abnormal complex echogenicity completely replacing the right testis and enlarging it, and the primary consideration was neoplasm. The patient was evaluated by Dr. Urology. Physical exam confirmed an abnormal right testis. The patient underwent baseline tumor markers including an alpha-fetoprotein on 08/07/2007, which was 1.6 (normal less than 6.1), and a quantitative hCG tumor marker on 08/01/2007 was 2 (normal less than 3 miu/ml). The patient subsequently underwent a right radical orchiectomy on 08/07/2007 under the direction of Dr. Urology. During the same anesthetic, the patient also underwent a right inguinal hernia repair with mesh by Dr. General Surgeon. The pathology from the procedure revealed in the right testis seminoma, classic type, 3 centimeters in greatest dimension, with the tumor extending to the tunica albuginea with involvement of the tunica vaginalis and the spermatic cord margin uninvolved by tumor. No venous invasion was noted. The patient subsequently recovered well from this procedure. He has undergone radiographic studies as described below. He is seen today in consideration of further treatment recommendations.

Currently, patient states he is feeling fairly well. He notes some soreness in the right inguinal area, but otherwise states that he is recovering quite well.

Past Medical History: Significant for a history of asthma and diabetes, recently diagnosed. He does not have any history of undescended testes.

Allergies: No known drug allergies

Medications: Include albuterol inhaler

Family History: Noncontributory. Specifically, there is no history of testicular cancer in the immediate or first-degree relatives.

Social History: The patient is accompanied by his wife. He smokes cigars once a week and drinks alcohol very rarely.

Review of Systems:
Constitutional: The patient notes a 7 pound weight loss since surgery, but states that this is improving. He did stop drinking a case of Pepsi per day.

ENT: Negative
Neurologic: Negative
Cardiovascular: Negative
Respiratory: The patient notes occasional dry cough
Gastrointestinal: Negative
Genitourinary: Negative except for occasional nocturia

The remaining complete review of systems is unremarkable as documented in our chart.

Physical Examination:
General: On physical exam, patient is resting comfortably in no acute distress.
Vital Signs: Weight: Today is 312 pounds. Blood Pressure: 124/78. Pulse: 64. Respirations: 16.
HEENT/Neck: Does not reveal any cervical or supraclavicular adenopathy. Pupils equal, round, and reactive to light and accommodation/extraocular muscles are intact. Sclerae are anicteric. Examination of the oral cavity reveals normal oral mucosa.
Lungs: Clear to auscultation and percussion
Axillary: Exam is negative bilaterally
Back: Spine is nontender
Cardiovascular: Reveal a regular rate and rhythm without murmurs or rubs noted
Abdomen: Reveals a soft nontender abdomen with normal abdominal bowel sounds and no evidence of hepatosplenomegaly or masses
Genitourinary: Reveals the right testis to be surgically absent. Fullness is noted in the right scrotal area. The left testis is without any suspicious induration or masses.
Extremities: Without clubbing, cyanosis, or edema.
Neurologic: Does not reveal any gross motor or sensory deficits noted in either of the upper or lower extremities. Gait is normal.
Psychiatric: The patient is alert, oriented and cooperative

Radiological Data: 08/07/2007, CT scan of the chest, abdomen and pelvis revealed a mildly prominent lymph node in the mediastinum near the AP window. Enlarged retroperitoneal and portacaval lymph nodes felt to be either reactive or possibly metastatic in nature were noted. While the exact size was not given in the report, I have had an opportunity to review these images and would estimate the lymph node size to be roughly 1.5 centimeters in greatest dimension. Followup PET scan done on 08/23/2007 did not reveal any evidence of abnormality. In particular, there were no areas of abnormality noted in the indeterminate lymph node regions on the CT scan.

Impression: Patient is a 45-year-old gentleman diagnosed with a T2, N0, M0, classical seminoma on the right testis, status post orchiectomy, stage I-B.

Recommendations: I reviewed with the patient the treatment options from my standpoint, which would include careful observation, radiation therapy to the draining nodal areas, or potential systemic chemotherapy. At this juncture, I understand Dr. Medical Oncology is not considering any potential carboplatin options.

I reviewed in detail the option of careful surveillance versus proceeding with radiation therapy. In particular, I discussed recent data (Journal of Clinical Oncology, November 15, 2002) of a pooled analysis evaluating 630 patients who underwent surveillance only following orchiectomy for stage I seminoma. The actuarial five year relapse-free rate was 82%. On univariate analysis, risk factors for recurrence included tumor size greater than 4 centimeters and re-testis invasion. I then discussed the option of radiation therapy at this juncture. Multiple studies have demonstrated that treatment with radiation therapy to the draining nodal areas, including the periaortic area, as well as the ipsilateral pelvic region, will decrease the risk of relapse to 2 to 3%. Randomized studies have further evaluated the role of ipsilateral pelvic radiation therapy in conjunction with periaortic radiation or periaortic radiation alone. While this MRC trial demonstrated equivalence in the two treatment fields, there was an increase in pelvic relapses with periaortic treatment only, albeit the numbers were small. Additional data recently published (Journal of Clinical Oncology, February 20, 2004) from the URTC is evaluating a randomized dose of 30 Gy versus 20 Gy in the adjuvant treatment, and treatment with 20 Gy was felt to be unlikely to produce relapse rates more than 3% higher than for the standard 30 Gy arm after approximately a five year followup.

Based upon this patient's presentation and findings, I reviewed the various options of surveillance versus treatment. Patient and his wife expressed a strong interest in proceeding with treatment. I then discussed the role of radiation therapy over four weeks, delivering a total of 25 Gy. I discussed potential acute side effects such as fatigue, skin irritation and GI upset including nausea. Frequently the nausea symptoms are well managed with premedication with Zofran. I then discussed the potential long-term risks including a small chance of serious damage to the bowel, bone, or other tissues, which could be serious. I described the risk of decreased fertility following radiation therapy, although the patient and his wife state that they are done having any further children, and this is not a big concern to them. I also discussed the small but present risk of second malignancies. I estimated this risk at approximately a half percent at 20 years. The patient was provided educational information. After reviewing the risks, benefits and side effects of the proposed treatment, patient and his wife want to proceed with the recommended radiation therapy.

I will arrange for the patient to return to this clinic next week for initial simulation. I would anticipate starting his treatment after he returns from his planned vacation to Las Vegas after the upcoming three day holiday. Please contact me in the interval if any questions or concerns arise. Thank you again for allowing me to participate in his care and treatment.
Signed: Radiation Oncologist

Radiotherapy Summary
10/11/2007

I would like to provide you with this patient's formal treatment details regarding his classical seminoma involving the right testes status post radical orchiectomy. TNM, stage T2, N0, M0, stage 1b. The patient was seen in consultation by me on August 23, 2007. He had recently presented with an enlarging right testicular mass. The patient subsequently underwent evaluation by Dr. Urology and on August 7, 2007 the patient underwent right radical orchiectomy. Of note, prior to his surgery, his baseline tumor markers including an alpha-fetoprotein as well as a beta HCG were both normal. The patient underwent staging studies, which did not reveal any evidence of metastatic disease including a CT scan of the chest, abdomen and pelvis and PET scan. I subsequently reviewed the various options with the patient including the option of no further treatment with careful observation versus proceeding with radiation therapy. The patient expressed a strong desire to proceed with treatment to the regional nodal areas. After informed consent the patient was treated.

Site: Planning treatment volume (periaortic and right pelvic lymph node areas).
Technique: AP PA
Energy: 18 MV photons
Dose Per Fraction: 125 cGy
Number of Fractions: 20
Total Dose: 25 Gy
Treatment Dates: September 14, 2007 to October 11, 2007

Clinical Treatment Course: Overall patient tolerated his radiation therapy well. He did use Zofran one hour prior to the radiation therapy, which provided excellent control of his nausea. He returned to work full time during the course of his radiation therapy. He did not develop any other significant side effects. The patient's weight at the time of his end of treatment evaluation was 322 pounds as compared to a pretreatment weight of 312 pounds.

I asked the patient to follow-up with myself in one month. I encouraged him to follow-up with Dr. Medical Oncology as well as his other physicians on a routine basis.

Thank you again for allowing me to participate in the care and treatment of this very pleasant gentleman.

Signed: Radiation Oncology